

may be designed to jettison the remaining fuel by means of the auxiliary jettisoning control.

(f) For turbine engine powered airplanes, means must be provided to prevent jettisoning the fuel in the tanks used for takeoff and landing below the level allowing climb from sea level to 10,000 feet and thereafter allowing 45 minutes cruise at a speed for maximum range. However, if there is an auxiliary control independent of the main jettisoning control, the system may be designed to jettison the remaining fuel by means of the auxiliary jettisoning control.

(g) The fuel jettisoning valve must be designed to allow flight personnel to close the valve during any part of the jettisoning operation.

(h) Unless it is shown that using any means (including flaps, slots, and slats) for changing the airflow across or around the wings does not adversely affect fuel jettisoning, there must be a placard, adjacent to the jettisoning control, to warn flight crewmembers against jettisoning fuel while the means that change the airflow are being used.

(i) The fuel jettisoning system must be designed so that any reasonably probable single malfunction in the system will not result in a hazardous condition due to unsymmetrical jettisoning of, or inability to jettison, fuel.

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#### OIL SYSTEM

##### § 25.1011 General.

(a) Each engine must have an independent oil system that can supply it with an appropriate quantity of oil at a temperature not above that safe for continuous operation.

(b) The usable oil capacity may not be less than the product of the endurance of the airplane under critical operating conditions and the approved maximum allowable oil consumption of the engine under the same conditions, plus a suitable margin to ensure system circulation. Instead of a rational analysis of airplane range for the purpose of computing oil requirements for

reciprocating engine powered airplanes, the following fuel/oil ratios may be used:

(1) For airplanes without a reserve oil or oil transfer system, a fuel/oil ratio of 30:1 by volume.

(2) For airplanes with either a reserve oil or oil transfer system, a fuel/oil ratio of 40:1 by volume.

(c) Fuel/oil ratios higher than those prescribed in paragraphs (b)(1) and (2) of this section may be used if substantiated by data on actual engine oil consumption.

##### § 25.1013 Oil tanks.

(a) *Installation.* Each oil tank installation must meet the requirements of § 25.967.

(b) *Expansion space.* Oil tank expansion space must be provided as follows:

(1) Each oil tank used with a reciprocating engine must have an expansion space of not less than the greater of 10 percent of the tank capacity or 0.5 gallon, and each oil tank used with a turbine engine must have an expansion space of not less than 10 percent of the tank capacity.

(2) Each reserve oil tank not directly connected to any engine may have an expansion space of not less than two percent of the tank capacity.

(3) It must be impossible to fill the expansion space inadvertently with the airplane in the normal ground attitude.

(c) *Filler connection.* Each recessed oil tank filler connection that can retain any appreciable quantity of oil must have a drain that discharges clear of each part of the airplane. In addition, each oil tank filler cap must provide an oil-tight seal.

(d) *Vent.* Oil tanks must be vented as follows:

(1) Each oil tank must be vented from the top part of the expansion space so that venting is effective under any normal flight condition.

(2) Oil tank vents must be arranged so that condensed water vapor that might freeze and obstruct the line cannot accumulate at any point.

(e) *Outlet.* There must be means to prevent entrance into the tank itself, or into the tank outlet, of any object that might obstruct the flow of oil through the system. No oil tank outlet may be enclosed by any screen or guard